

CLAIMS

What is claimed is:

- 5 1. A method of automated sample processing comprising the steps of:
establishing an automated sample processing system having an automated process
operation capability that causes automated process operation events through
robotic sample process functions;
inputting a plurality of desired sample process operations;
10 adaptably scheduling robotic sample process functions for an initial aggregated
event topology;
commencing initial automatic processing, through operation of said robotic
sample process functions, of said initial aggregated event topology;
altering at least one aspect of said initial aggregated event topology to create an
15 altered aggregated event topology;
adaptably scheduling robotic sample process functions for said altered aggregated
event topology;
interrupting said initial automatic processing of said initial aggregated event
topology; and
20 continuing revised automatic processing, through operation of said robotic sample
process functions, of said altered aggregated event topology.
2. A method of automated sample processing as described in claim 1 wherein said
step of establishing an automated sample processing system having an automated
25 process operation capability that causes automated process operation events
through robotic sample process functions comprises the step of establishing an
automated slide processing system.
3. A method of automated sample processing as described in claim 2 wherein said
30 step of automatically processing at least one sample comprises the steps of:
arranging a plurality of slides on a carrier retainment assembly;
applying a reagent to said plurality of slides; and
automatically staining said plurality of slides.

4. A method of automated sample processing as described in claim 3 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the steps of:
- 5 establishing a plurality of automated slide stainers; and electronically connecting said plurality of automated slide stainers.
5. A method of automated sample processing as described in claim 4 wherein said step of establishing an automated sample processing system comprises the steps of:
- 10 establishing a stand alone automated slide processing system; utilizing a separate full function computer programmed to respond to said stand alone automated slide processing system; and electronically connecting said separate full function computer to said stand alone automated slide processing system.
- 15 6. A method of automated sample processing as described in claim 5 and further comprising the step of establishing a local area network electronically connected to said automated sample processing system.
- 20 7. A method of automated sample processing as described in claim 4 wherein said step of adaptably scheduling robotic sample process functions for an initial aggregated event topology comprises the step of separately adaptably scheduling robotic sample process functions for each of said plurality of automated slide stainers.
- 25 8. A method of automated sample processing as described in claim 1 or 3 wherein said step of adaptably scheduling robotic sample process functions for an initial aggregated event topology comprises the step of automatically creating a plurality of varied-parameter robotic control indicium, each for said same aggregated event topology.
- 30 9. A method of automated sample processing as described in claim 1 or 8 wherein said step of adaptably scheduling robotic sample process functions for said altered aggregated event topology comprises the step of automatically creating a plurality
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of varied-parameter robotic control indicium, each for said same aggregated event topology.

10. A method of automated sample processing as described in claim 9 and further
5 comprising the step of accomplishing enhanced temporal scheduling of a plurality
of sample process steps.
11. A method of automated sample processing as described in claim 10 wherein said
step of accomplishing enhanced temporal scheduling of a plurality of sample
10 process steps comprises the step of comparing said indicium.
12. A method of automated sample processing as described in claim 8 or 9 wherein
said step of automatically creating a plurality of varied-parameter robotic control
indiciu m comprises the step of automatically creating a plurality of varied-
15 parameter robotic control indicium using a parameter selected from a group
consisting of:
a substance priority parameter, a reagent grouping parameter, a robotic movement
parameter, a sample location priority parameter, a sample proximity priority
parameter, a sample insert time priority parameter, a user input parameter, a user
20 priority parameter, a sample time since last processing priority parameter, a time-
based priority value parameter, and a sample weighting parameter.
13. A method of automated sample processing as described in claim 8 or 9 wherein
said step of automatically creating a plurality of varied-parameter robotic control
25 indicium comprises the steps of:
automatically creating a sample time since last processing priority parameter
robotic control indicium;
automatically creating a robotic movement parameter robotic control indicium;
and
30 automatically creating a substance priority parameter robotic control indicium.
14. A method of automated sample processing as described in claim 1, 3, or 8 and
further comprising the step of not completing said initial automatic processing.

15. A method of automated sample processing as described in claim 14 wherein said steps of altering at least one aspect of said initial aggregated event topology to create an altered aggregated event topology and adaptably scheduling robotic sample process functions for said altered aggregated event topology are both accomplished while said step of initial automatic processing is occurring.
16. A method of automated sample processing as described in claim 1 or 3 wherein said step of interrupting said initial automatic processing of said initial aggregated event topology occurs while said step of initial automatic processing is occurring.
17. A method of automated sample processing as described in claim 16 wherein said step of interrupting said initial automatic processing of said initial aggregated event topology comprises the step of seamlessly interrupting said initial automatic processing of said initial aggregated event topology.
18. A method of automated sample processing as described in claim 1, 3, or 8 wherein said step of adaptably scheduling robotic sample process functions for an initial aggregated event topology comprises the step of
19. A method of automated sample processing as described in claim 1 or 18 wherein said step of adaptably scheduling robotic sample process functions for said altered aggregated event topology comprises the step of creating an interspersial robotic control functionality.
20. A method of automated sample processing as described in claim 19 wherein said step of creating an interspersial robotic control functionality comprises the step of interleaving a plurality of process operations.
21. A method of automated sample processing as described in claim 19 wherein said step of creating an interspersial robotic control functionality comprises the step of sequencing a plurality of individual sample operations.
22. A method of automated sample processing as described in claim 1, 3, 8, or 14 wherein said step of altering at least one aspect of said initial aggregated event topology to create an altered aggregated event topology comprises the step of

- 5 altering the aggregate of said aggregated event topology and wherein said step of altering the aggregate of said aggregated event topology causes said steps of adaptably scheduling robotic sample process functions for said altered aggregated event topology and interrupting said initial automatic processing of said initial aggregated event topology to occur.
- 10 23. A method of automated sample processing as described in claim 1, 3, 8, or 14 wherein said step of altering at least one aspect of said initial aggregated event topology to create an altered aggregated event topology comprises the step of altering the topology of said aggregated event topology and wherein said step of altering the topology of said aggregated event topology causes said steps of adaptably scheduling robotic sample process functions for said altered aggregated event topology and interrupting said initial automatic processing of said initial aggregated event topology to occur.
- 15 24. A method of automated sample processing as described in claim 1, 3, 8, or 14 and further comprising the step of sensing an operator access event and wherein said step of sensing an operator access event causes said steps of adaptably scheduling robotic sample process functions for said altered aggregated event topology and interrupting said initial automatic processing of said initial aggregated event topology to occur.
- 20 25. A method of automated sample processing as described in claim 1, 3, 8, or 14 and further comprising the step of accepting a user change and wherein said step of accepting a user change causes said steps of adaptably scheduling robotic sample process functions for said altered aggregated event topology and interrupting said initial automatic processing of said initial aggregated event topology to occur.
- 25 26. A method of automated sample processing as described in claim 1 or 3 and further comprising the step of automatically prompting an operator action needed for said automatic processing to occur.
- 30 27. A method of automated sample processing as described in claim 1 or 3 and further comprising the step of repetitively automatically checking if an operator action is needed for said automatic processing to occur.
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28. A method of automated sample processing as described in claim 1 or 3 and further comprising the step of providing real time status information relative to said automatic processing.
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29. A method of automated sample processing as described in claim 1 or 3 and further comprising the step of providing pending sample information relative to said automatic processing.
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30. A method of automated sample processing as described in claim 1 or 3 and further comprising the step of providing a real time completion estimate for an aspect of said automatic processing.
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31. A method of automated sample processing as described in claim 1 or 3 and further comprising the step of mixing a substance for use in said automatic processing based on said steps of either adaptably scheduling robotic sample process functions for an initial aggregated event topology or adaptably scheduling robotic sample process functions for said altered aggregated event topology.
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32. A method of automated sample processing as described in claim 1 or 3 wherein said step of establishing an automated sample processing system comprises the step of providing at least one substance in a lockable reagent retainment assembly and further comprising the step of providing said lockable reagent retainment element in a generally unlocked state.
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33. An automated sample processing system comprising:
at least one sample;
a robotic motion system to which said at least one sample is responsive;
an aggregated sample process input;
30 an initial adaptive schedule functionality to which said robotic motion system is at least in part initially responsive;
an aggregated event topology alteration element that acts while said initial adaptive schedule functionality is operating;
an second adaptive schedule functionality to which said robotic motion system is at least in part initially responsive, that is responsive to said aggregated event
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- topology alteration element, and that acts while said initial adaptive schedule functionality is operating;
an initial adaptive schedule functionality interrupt responsive to said second adaptive schedule functionality; and
5 a process continuation functionality responsive to said initial adaptive schedule functionality interrupt, and to which said robotic motion system is responsive.
34. An automated sample processing system as described in claim 33 wherein said at least one sample comprises a biological sample arranged on a slide.
- 10 35. An automated sample processing system as described in claim 34 and further comprising:
a plurality of slides on a carrier element retainment assembly;
at least one reagent container; and
15 a slide stain element configured to act upon said plurality of slides.
36. An automated sample processing system as described in claim 35 and further comprising:
a plurality of automated slide stainers; and
20 an electronic connection to said plurality of automated slide stainers.
37. An automated sample processing system as described in claim 36 and further comprising:
a separate full function computer programmed to respond to said stand alone automated slide processing system; and
25 an electronic connection between said separate full function computer and said stand alone automated slide processing system.
38. An automated sample processing system as described in claim 37 and further comprising a local area network electronically connected to said stand alone automated slide processing system.
- 30 39. An automated sample processing system as described in claim 36 wherein said initial adaptive schedule functionality to which said robotic motion system is at least in part initially responsive and said second adaptive schedule functionality to
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which said robotic motion system is at least in part initially responsive each comprise a separate adaptive scheduling functionality for each of said plurality of automated slide stainers.

- 5 40. An automated sample processing system as described in claim 33 or 35 wherein said initial adaptive schedule functionality to which said robotic motion system is at least in part initially responsive comprises a plurality of varied-parameter robotic control simulation functionalities.
- 10 41. An automated sample processing system as described in claim 33 or 40 wherein said second adaptive schedule functionality to which said robotic motion system is at least in part initially responsive comprises a plurality of varied-parameter robotic control simulation functionalities.
- 15 42. An automated sample processing system as described in claim 41 and further comprising an enhanced temporal scheduler element.
- 20 43. An automated sample processing system as described in claim 42 wherein said enhanced temporal scheduler element comprises a robotic control simulation results comparator.
- 25 44. An automated sample processing system as described in claim 40 or 41 wherein said plurality of varied-parameter robotic control simulation functionalities comprise a plurality of varied-parameter robotic control simulation functionalities programmed to use a parameter selected from a group consisting of:
a substance priority parameter, a reagent grouping parameter, a robotic movement parameter, a sample location priority parameter, a sample proximity priority parameter, a sample insert time priority parameter, a user input parameter, a user priority parameter, a sample time since last processing priority parameter, a time-based priority value parameter, and a sample weighting parameter.
- 30 45. An automated sample processing system as described in claim 40 or 41 wherein said plurality of varied-parameter robotic control simulation functionalities comprise:

a sample time since last processing priority parameter robotic control simulation functionality;
a robotic movement parameter robotic control simulation functionality; and
a substance priority parameter robotic control simulation functionality.

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46. An automated sample processing system as described in claim 33 wherein said initial adaptive schedule functionality interrupt comprises a seamless initial adaptive schedule functionality interrupt.
- 10 47. An automated sample processing system as described in claim 33, 35, or 40 wherein said initial adaptive schedule functionality to which said robotic motion system is at least in part initially responsive comprises an interspersial robotic control element.
- 15 48. An automated sample processing system as described in claim 33 or 47 wherein said second adaptive schedule functionality to which said robotic motion system is at least in part initially responsive comprises an interspersial robotic control element.
- 20 49. An automated sample processing system as described in claim 48 wherein said interspersial robotic control element comprises an individual sample operations interleave element.
50. An automated sample processing system as described in claim 48 wherein said interspersial robotic control element comprises an individual sample operations sequence element.
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51. An automated sample processing system as described in claim 33, 35, or 40 and further comprising an operator access event sensor to which said second adaptive schedule functionality is responsive.
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52. An automated sample processing system as described in claim 33 or 35 and further comprising an automatically operator need prompt.

53. An automated sample processing system as described in claim 33 or 35 and further comprising a real time status information element.
54. An automated sample processing system as described in claim 33 or 35 and further comprising a pending sample information element.
55. An automated sample processing system as described in claim 33 or 35 and further comprising a real time completion estimate element.
56. An automated sample processing system as described in claim 33 or 35 and further comprising a substance mixer that is responsive to said initial adaptive schedule functionality and said second adaptive schedule functionality.
57. An automated sample processing system as described in claim 33 or 35 and further comprising a lockable reagent retainment assembly.
58. An automated sample processing system as described in claim 57 wherein said lockable reagent retainment assembly comprises a generally unlocked reagent retainment assembly.
59. A method of automated sample processing comprising the steps of:
establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions;
scheduling a plurality of sample process operations for a given aggregated event topology;
automatically creating a plurality of varied-parameter robotic control indicium, each for said same aggregated event topology;
comparing said plurality of robotic control indicium;
generating a preferred robotic control functionality; and
automatically processing at least one sample through operation of said robotic sample process functions and acting in accordance with said preferred robotic control functionality.

60. A method of automated sample processing as described in claim 59 wherein said step of automatically creating a plurality of varied-parameter robotic control indicium comprises the steps of:
automatically create a first control indicium for said aggregated event topology;
5 calculating a first resultant based on said first control indicium;
automatically create a second control indicium for said aggregated event topology;
and
calculating a second resultant based on said second control indicium.
- 10 61. A method of automated sample processing as described in claim 60 wherein said step of automatically creating a plurality of varied-parameter robotic control indicium further comprises the steps of:
automatically create a third control indicium for said aggregated event topology;
and
15 calculating a third resultant based on said first control indicium.
62. A method of automated sample processing as described in claim 59 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events
20 through robotic sample process functions comprises the step of establishing an automated slide processing system.
63. A method of automated sample processing as described in claim 62 wherein said step of automatically processing at least one sample comprises the steps of:
25 arranging a plurality of slides on a carrier retainment assembly;
applying a reagent to said plurality of slides; and
automatically staining said plurality of slides.
64. A method of automated sample processing as described in claim 63 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events
30 through robotic sample process functions comprises the steps of:
establishing a plurality of automated slide stainers; and
electronically connecting said plurality of automated slide stainers.

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65. A method of automated sample processing as described in claim 64 wherein said step of establishing an automated sample processing system comprises the steps of:
establishing a stand alone automated slide processing system;
5 utilizing a separate full function computer programmed to respond to said stand alone automated slide processing system; and
electronically connecting said separate full function computer to said stand alone automated slide processing system.
- 10 66. A method of automated sample processing as described in claim 65 and further comprising the step of establishing a local area network electronically connected to said automated sample processing system.
- 15 67. A method of automated sample processing as described in claim 59, 61, or 63 wherein said step of automatically creating a plurality of varied-parameter robotic control indicium comprises the step of automatically creating a plurality of varied-parameter robotic control indicium using a parameter selected from a group consisting of:
a substance priority parameter, a reagent grouping parameter, a robotic movement
20 parameter, a sample location priority parameter, a sample proximity priority parameter, a sample insert time priority parameter, a user input parameter, a user priority parameter, a sample time since last processing priority parameter, a time-based priority value parameter, and a sample weighting parameter.
- 25 68. A method of automated sample processing as described in claim 59, 61, or 63 wherein said step of automatically creating a plurality of varied-parameter robotic control indicium comprises the steps of:
automatically creating a sample time since last processing priority parameter robotic control indicium;
30 automatically creating a robotic movement parameter robotic control indicium;
and
automatically creating a substance priority parameter robotic control indicium.

69. A method of automated sample processing as described in claim 59, 61, or 63 and further comprising the step of accomplishing enhanced temporal scheduling of a plurality of sample process steps.
- 5 70. A method of automated sample processing as described in claim 59, 61, or 63 wherein said step of comparing said plurality of robotic control indicium comprises the step of accomplishing enhanced temporal scheduling of a plurality of sample process steps.
- 10 71. A method of automated sample processing as described in claim 69 wherein said step of accomplishing enhanced temporal scheduling of a plurality of sample process steps comprises the step of comparing processing time indicium.
72. A method of automated sample processing as described in claim 69 wherein said
15 step of comparing said plurality of robotic control indicium comprises the step of comparing completion time estimates.
73. A method of automated sample processing as described in claim 69 wherein said
20 step of comparing said plurality of robotic control indicium comprises the step of comparing substance cost estimates.
74. A method of automated sample processing as described in claim 69 wherein said
25 step of comparing said plurality of robotic control indicium comprises the step of comparing sample priority assignments.
75. A method of automated sample processing as described in claim 59 wherein said
30 step of automatically creating a plurality of varied-parameter robotic control indicium comprises the step of automatically creating an initial robotic control indicium, wherein said step of generating a preferred robotic control functionality comprises the step of generating an initially preferred robotic control
35 sample through operation of said robotic sample process functions and acting in accordance with said preferred robotic control functionality comprises the step of automatically processing at least one sample through operation of said robotic sample process functions and acting in accordance with said initially preferred

robotic control functionality, and wherein said step of automatically creating a plurality of varied-parameter robotic control indicium thereafter comprises the step of automatically creating an second robotic control indicium, wherein said step of generating a preferred robotic control functionality thereafter comprises the step of generating an second preferred robotic control functionality, and wherein said step of automatically processing at least one sample through operation of said robotic sample process functions thereafter comprises the step of automatically processing at least one sample through operation of said robotic sample process functions and acting in accordance with said second preferred robotic control functionality.

76. A method of automated sample processing as described in claim 59 wherein said step of comparing said plurality of robotic control indicium comprises the step of conducting a qualitative analysis of said robotic control indicium.

77. A method of automated sample processing as described in claim 76 wherein said step of conducting a qualitative analysis of said robotic control indicium comprises the step of conducting a qualitative analysis of said robotic control indicium using parameters selected from a group consisting of:
an amount of substance used parameter, a sample time under buffer parameter, and an extra amount of buffer used parameter.

78. An automated sample processing system comprising:
at least one sample;
a robotic motion system to which said at least one sample is responsive;
an aggregated sample process input;
a plurality of varied-parameter robotic control simulation functionalities responsive to said aggregated sample process input;
an automated process simulator comparator responsive to said plurality of varied-parameter robotic control functionalities;
a preferred functionality robotic control generator responsive to said automated process simulator comparator; and
an automated process functionality responsive to said preferred functionality robotic control generator, and to which said robotic motion system is responsive.

79. An automated sample processing system as described in claim 78 wherein said plurality of varied-parameter robotic control simulation functionalities comprises:
a first control simulation functionality; and
a second control simulation functionality.
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80. An automated sample processing system as described in claim 79 wherein said plurality of varied-parameter robotic control simulation functionalities further comprises a third control simulation functionality.
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81. An automated sample processing system as described in claim 78 wherein said at least one sample comprises a biological sample arranged on a slide.
82. An automated sample processing system as described in claim 81 and further comprising:
15 a plurality of slides on a carrier element retainment assembly;
at least one reagent container; and
a slide stain element configured to act upon said plurality of slides.
83. An automated sample processing system as described in claim 82 and further comprising:
20 a plurality of automated slide stainers; and
an electronic connection to said plurality of automated slide stainers.
84. An automated sample processing system as described in claim 83 and further comprising:
25 a separate full function computer programmed to respond to said stand alone automated slide processing system; and
an electronic connection between said separate full function computer and said stand alone automated slide processing system.
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85. An automated sample processing system as described in claim 84 and further comprising a local area network electronically connected to said stand alone automated slide processing system.

86. An automated sample processing system as described in claim 78, 80, or 82 wherein said plurality of varied-parameter robotic control simulation functionalities comprise a plurality of varied-parameter robotic control simulation functionalities programmed to use a parameter selected from a group consisting of:
- 5 of:
- a substance priority parameter, a reagent grouping parameter, a robotic movement parameter, a sample location priority parameter, a sample proximity priority parameter, a sample insert time priority parameter, a user input parameter, a user priority parameter, a sample time since last processing priority parameter, a time-based priority value parameter, and a sample weighting parameter.
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87. An automated sample processing system as described in claim 78, 80, or 82 wherein said plurality of varied-parameter robotic control simulation functionalities comprise:
- 15 a sample time since last processing priority parameter robotic control simulation functionality;
- a robotic movement parameter robotic control simulation functionality; and
- a substance priority parameter robotic control simulation functionality.
- 20 88. An automated sample processing system as described in claim 78, 80, 82, or 86 wherein said automated process simulator comparator responsive to said plurality of varied-parameter robotic control functionalities comprises an enhanced temporal scheduler element.
- 25 89. An automated sample processing system as described in claim 78, 80, 82, or 86 and further comprising an enhanced temporal scheduler element.
90. An automated sample processing system as described in claim 88 wherein said enhanced temporal scheduler element comprises a robotic control simulation results comparator.
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91. An automated sample processing system as described in claim 88 wherein said automated process simulator comparator comprises a completion time estimate comparator.
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92. An automated sample processing system as described in claim 88 wherein said automated process simulator comparator comprises a substance cost estimate comparator.
- 5 93. An automated sample processing system as described in claim 88 wherein said automated process simulator comparator comprises a sample priority assignment comparator.
- 10 94. An automated sample processing system as described in claim 78 wherein said automated process simulator comparator comprises a repetitive process simulator comparator.
- 15 95. An automated sample processing system as described in claim 78 wherein said automated process simulator comparator comprises a qualitative analysis comparator.
- 20 96. An automated sample processing system as described in claim 95 wherein said qualitative analysis comparator comprises a qualitative analysis comparator programmed to compare parameters selected from a group consisting of:
an amount of substance used parameter, a sample time under buffer parameter,
and an extra amount of buffer used parameter.
- 25 97. A method of automated sample processing comprising the steps of:
establishing an automated sample processing system having an automated process
operation capability that causes automated process operation events through
robotic sample process functions;
automatically creating a plurality of varied-parameter robotic control indicium,
each for said same aggregated event topology;
displaying a user selection upon completion of said step of automatically creating
30 a plurality of varied-parameter robotic control indicium, each for said same
aggregated event topology;
accepting a user selection relative to said plurality of robotic control indicium;
generating a user-selected robotic control functionality for said aggregated event
topology; and

automatically processing at least one sample through operation of said robotic sample process functions and acting in accordance with said user-selected robotic control functionality.

5 98. A method of automated sample processing as described in claim 97 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the step of establishing an automated slide processing system.

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99. A method of automated sample processing as described in claim 98 wherein said step of automatically processing at least one sample comprises the steps of:
arranging a plurality of slides on a carrier retainment assembly;
applying a reagent to said plurality of slides; and
15 automatically staining said plurality of slides.

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100. A method of automated sample processing as described in claim 99 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the steps of:
20 establishing a plurality of automated slide stainers; and
electronically connecting said plurality of automated slide stainers.

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101. A method of automated sample processing as described in claim 100 wherein said step of establishing an automated sample processing system comprises the steps of:
25 establishing a stand alone automated slide processing system;
utilizing a separate full function computer programmed to respond to said stand alone automated slide processing system; and
30 electronically connecting said separate full function computer to said stand alone automated slide processing system.

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102. A method of automated sample processing as described in claim 101 and further comprising the step of establishing a local area network electronically connected to said automated sample processing system.
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103. A method of automated sample processing as described in claim 99 wherein said step of displaying a user selection comprises the step of displaying a suggested user selection.
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104. A method of automated sample processing as described in claim 103 wherein said step of displaying a suggested user selection comprises the step of displaying a temporally enhanced suggested user selection.
- 10 105. A method of automated sample processing as described in claim 99 wherein said step of displaying a user selection comprises the step of providing a user selection menu.
106. A method of automated sample processing as described in claim 99 and further comprising the step of accepting a user parameter input and wherein said step of displaying a user selection is responsive to said user parameter input.
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107. A method of automated sample processing as described in claim 97 wherein said step of displaying a user selection comprises the step of displaying at least one suggested sample location.
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108. A method of automated sample processing as described in claim 107 wherein said step of displaying at least one suggested sample location comprises the step of displaying a suggested sample drawer location.
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109. A method of automated sample processing as described in claim 100, 101, or 102 wherein said step of displaying a user selection comprises the step of displaying at least one suggested sample location.
- 30 110. A method of automated sample processing as described in claim 109 wherein said step of displaying at least one suggested sample location comprises the step of displaying at least one suggested stainer location.
111. A method of automated sample processing as described in claim 97 wherein said step of automatically creating a plurality of varied-parameter robotic control
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indicium comprises the step of automatically creating a plurality of inter machine schedule indicium.

112. An automated sample processing system comprising:
5 at least one sample;
a robotic motion system to which said at least one sample is responsive;
an aggregated sample process input;
a plurality of varied-parameter robotic control indicium creation functionalities responsive to said aggregated sample process input;
10 an alternative system configuration display responsive to said plurality of varied-parameter robotic control indicium creation functionalities;
a user selection element;
a process robotic control functionality generator responsive to said user selection element; and
15 an automated process functionality responsive to said process robotic control functionality generator, and to which said robotic motion system is responsive.
113. An automated sample processing system as described in claim 112 wherein said at least one sample comprises a biological sample arranged on a slide.
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114. An automated sample processing system as described in claim 113 and further comprising:
i. a plurality of slides on a carrier element retainment assembly;
ii. at least one reagent container; and
25 iii. a slide stain element configured to act upon said plurality of slides.
115. An automated sample processing system as described in claim 114 and further comprising:
a plurality of automated slide stainers; and
30 an electronic connection to said plurality of automated slide stainers.
116. An automated sample processing system as described in claim 115 and further comprising:
a separate full function computer programmed to respond to said stand alone
35 automated slide processing system; and

an electronic connection between said separate full function computer and said stand alone automated slide processing system.

117. An automated sample processing system as described in claim 116 and further
5 comprising a local area network electronically connected to said stand alone
automated slide processing system.
118. An automated sample processing system as described in claim 114 wherein said
alternative system configuration display comprises a suggested user selection
10 element.
119. An automated sample processing system as described in claim 118 and further
comprising a temporally enhanced suggested user selection element.
- 15 120. An automated sample processing system as described in claim 114 wherein said
alternative system configuration display comprises a user selection menu.
121. An automated sample processing system as described in claim 114 and further
comprising a user parameter input to which said alternative system configuration
20 display is responsive.
122. An automated sample processing system as described in claim 112 wherein said
alternative system configuration display comprises a suggested sample location
element.
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123. An automated sample processing system as described in claim 122 wherein said
suggested sample location element comprises a suggested sample drawer location
element.
- 30 124. An automated sample processing system as described in claim 115, 116, or 117
wherein said alternative system configuration display comprises a suggested
sample location element.

125. An automated sample processing system as described in claim 124 wherein said suggested sample location element comprises a suggested stainer location element.
- 5 126. An automated sample processing system as described in claim 112 wherein said plurality of varied-parameter robotic control indicium creation functionalities comprise an inter machine schedule element.
127. A method of automated sample processing comprising the steps of:
10 establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions;
inputting a plurality of desired sample process operations;
scheduling a first plurality of sample process operations for an aggregated event
15 topology;
user altering said aggregated event topology;
displaying at least some altered schedule information in response to said step of user altering said aggregated event topology;
accepting a user selection in response to said step of displaying at least some
20 altered schedule information;
generating a user-selected robotic control functionality; and
automatically processing at least one sample through operation of said robotic sample process functions and acting in accordance with said user-selected robotic control functionality.
- 25 128. A method of automated sample processing as described in claim 127 wherein said step of user altering said aggregated event topology occurs while said step of automatically processing at least one sample through operation of said robotic sample process functions is occurring.
- 30 129. A method of automated sample processing as described in claim 127 wherein said step of establishing an automated sample processing system having an automated process operation capability that causes automated process operation events through robotic sample process functions comprises the step of establishing an
35 automated slide processing system.

130. A method of automated sample processing as described in claim 129 wherein said step of automatically processing at least one sample comprises the steps of:
arranging a plurality of slides on a carrier retainment assembly;
5 applying a reagent to said plurality of slides; and
automatically staining said plurality of slides.
131. A method of automated sample processing as described in claim 130 wherein said step of establishing an automated sample processing system having an automated
10 process operation capability that causes automated process operation events through robotic sample process functions comprises the steps of:
establishing a plurality of automated slide stainers; and
electronically connecting said plurality of automated slide stainers.
- 15 132. A method of automated sample processing as described in claim 131 wherein said step of establishing an automated sample processing system comprises the steps of:
establishing a stand alone automated slide processing system;
utilizing a separate full function computer programmed to respond to said stand
20 alone automated slide processing system; and
electronically connecting said separate full function computer to said stand alone automated slide processing system.
133. A method of automated sample processing as described in claim 132 and further
25 comprising the step of establishing a local area network electronically connected to said automated sample processing system.
134. A method of automated sample processing as described in claim 127, 128, or 130 wherein said step of user altering said aggregated event topology comprises the
30 step of accepting a user change input.
135. A method of automated sample processing as described in claim 134 wherein said step of accepting a user change input comprises the step of accepting a temporary
35 user change.

136. A method of automated sample processing as described in 127, 128, or 130 wherein said step of user altering said aggregated event topology comprises the step of adding a sample to said aggregated event topology.
- 5 137. A method of automated sample processing as described in claim 127, 128, or 130 wherein said step of user altering said aggregated event topology comprises the step of changing a sample in said aggregated event topology.
- 10 138. A method of automated sample processing as described in claim 127, 128, or 130 wherein said step of displaying at least some altered schedule information comprises the step of displaying a synopsis of the effect due to said altered schedule information.
- 15 139. A method of automated sample processing as described in claim 127, 128, or 130 wherein said step of displaying at least some altered schedule information comprises the step of displaying a temporal impact due to said altered schedule information.
- 20 140. A method of automated sample processing as described in claim 139 wherein said step of displaying a temporal impact due to said altered schedule information comprises the step of displaying an estimated temporal impact due to said altered schedule information.
- 25 141. A method of automated sample processing as described in claim 127, 128, or 130 wherein said step of accepting a user selection comprises the step of activating a user change.
- 30 142. A method of automated sample processing as described in claim 127, 128, or 130 wherein said step of accepting a user selection comprises the step of undoing a user change.
- 35 143. An automated sample processing system comprising:
at least one sample;
a robotic motion system to which said at least one sample is responsive;
an aggregated sample process input;

a schedule functionality to which said robotic motion system is responsive;
an aggregated event topology alteration element;
an alternative process functionality selection display responsive to said aggregated
event topology alteration element;
5 a user selection element; and
an automated process functionality responsive to said user selection element, and
to which said robotic motion system is responsive.

144. An automated sample processing system as described in claim 143 wherein said
10 aggregated event topology alteration element acts while said automated process
functionality is operating.

145. An automated sample processing system as described in claim 143 wherein said at
least one sample comprises a biological sample arranged on a slide.

15 146. An automated sample processing system as described in claim 145 and further
comprising:
a plurality of slides on a carrier element retainment assembly;
at least one reagent container; and
20 a slide stain element configured to act upon said plurality of slides.

147. An automated sample processing system as described in claim 146 and further
comprising:
a plurality of automated slide stainers; and
25 an electronic connection to said plurality of automated slide stainers.

148. An automated sample processing system as described in claim 147 and further
comprising:
a separate full function computer programmed to respond to said stand alone
30 automated slide processing system; and
an electronic connection between said separate full function computer and said
stand alone automated slide processing system.

149. An automated sample processing system as described in claim 148 and further comprising a local area network electronically connected to said stand alone automated slide processing system.
- 5 150. An automated sample processing system as described in claim 143, 144, or 146 and further comprising an input change detector to which said alternative process functionality selection display is responsive.
- 10 151. An automated sample processing system as described in claim 150 wherein said aggregated event topology alteration element comprises a temporary user change element.
- 15 152. An automated sample processing system as described in claim 143, 144, or 146 wherein said aggregated event topology alteration element comprises a sample addition element.
- 20 153. An automated sample processing system as described in claim 143, 144, or 146 wherein said aggregated event topology alteration element comprises a sample change element.
154. An automated sample processing system as described in claim 143, 144, or 146 wherein said alternative process functionality selection display comprises a effect synopsis display element.
- 25 155. An automated sample processing system as described in claim 143, 144, or 146 wherein said alternative process functionality selection display comprises a temporal impact display element.
- 30 156. An automated sample processing system as described in claim 155 wherein said temporal impact display element comprises an estimated temporal impact display element.
157. An automated sample processing system as described in claim 143, 144, or 146 wherein said user selection element comprises a user change activation element.

158. An automated sample processing system as described in claim 143, 144, or 146 wherein said user selection element comprises a user change undo element.